

Ratnagiri, and Gonditola in Bhandara district.

Note: Earlier it was known from Goa, Karnataka, Kerala, Orissa, Tamil Nadu, and Uttar Pradesh.

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48. ADDITIONS TO THE GRASSES OF MAHARASHTRA

(With three text-figures)

During our survey of southwestern Maharashtra, three species of grasses were recorded for the first time for the state of Maharashtra. Short descriptions and illustrations have been provided for each of them. The specimens have been deposited in the Herbarium of Shivaji University, Kolhapur.

1. *Bhidea fischeri* P.V. Sreekumar & B.V. Shetty in Kew Bull. 42(3): 683-685. 1987. Fig. 1.

Annual, tufted, 15-35 cm tall, simple or branched; upper nodes villous, lower glabrous. Leaves lanceolate, 2-7 x 0.1-0.5 cm, acute. Racemes 2, 3-7 cm long; joints villous on one side. Sessile spikelets lanceolate, 9-10.5 mm long, awned; callus acute, densely silky villous. Lower glume lanceolate, 5-nerved, acuminate. Upper glume oblong, 3-lobed at apex with 4-5 mm long arista. Lower lemma ovate-lanceolate, 3-nerved, keels winged, epaleate. Upper lemma oblong-elliptic, 3-nerved, apex notched, awn geniculate, 55-65 mm long. Palea ovate, subacute. Lodicules 2. Stamen 2. Pedicels turbinate, villous on one side. Pedicelled spikelets empty, oblique, lanceolate, 8-10 mm long. Lower

glume lanceolate, 7-9 nerved, acuminate. Upper glume lanceolate, 3-nerved, acuminate.

A rare grass growing on lateritic plateaux.

Fl. & Fr.: August-October.

Distribution: Ratnagiri: Pawas, *Salunkhe* 8227; Sindhudurg: Devgad, *Yadav* 8387.

2. *Chloris pycnothrix* Trin. Gram. Unifl. 234. 1824; Brito & Mathew in Mathew, Fl. Tamil. Carnatic 3: 1821. 1983 Fig. 2.

Annual, tufted, 15-55 cm tall, simple or branched. Leaves broadly linear, 1-10 x 0.2-0.6 cm, apex mucronate. Spikes 3-5, digitate, 2-5 cm long; rachis filiform. Spikelets closely pectinate, subsessile, ovate-lanceolate, 1.8-3.2 mm long. Lower glume ovate-lanceolate, 1-nerved, acuminate. Upper glume ovate-lanceolate, 1-nerved, acuminate. Lower lemma ovate-lanceolate, 1-nerved, apex notched, 2-toothed, awn capillary, 6-20 mm long. Palea linear-lanceolate, 2-nerved, acute. Rachilla slender, hairy, lodicules 2, stamens 3.

A rare grass growing near moist places.

Fl. & Fr.: September-December.

Distribution: Satara: Pusegaon, *Salunkhe* 8657.

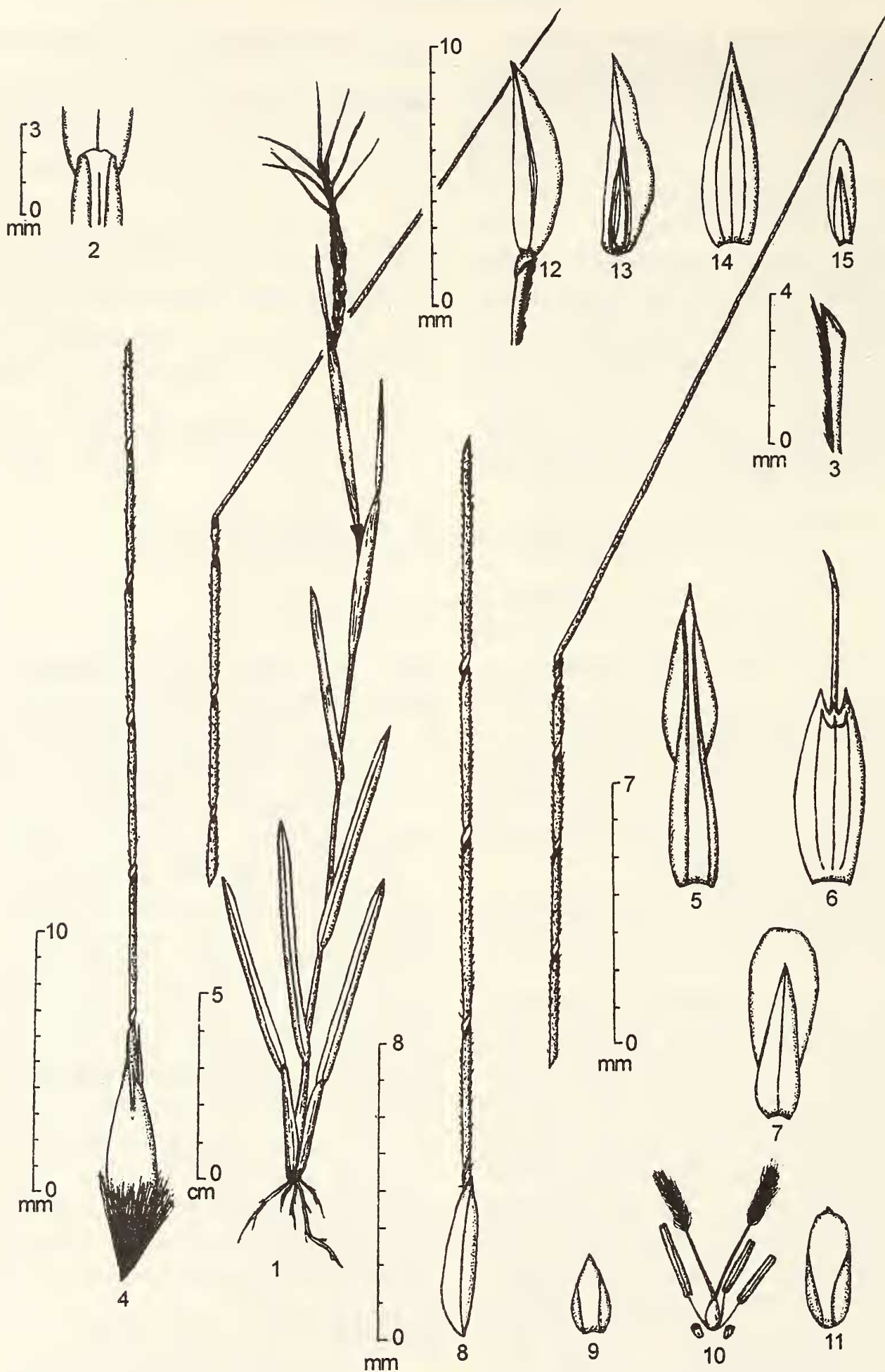


Fig. 1: *Bhidea fischeri* P.V. Sreekumar & B.V. Shetty; 1. Habit, 2. Ligule, 3. Joint, 4-11. Sessile spikelet: 4. Spikelet, 5. Lower glume, 6. Upper glume, 7. Lower lemma, 8. Upper lemma, 9. Palea, 10. Stamens and pistil, 11. Caryopsis, 12-15: Pedicelled spikelet: 12. Spikelet, 13. Lower glume, 14. Upper glume, 15. Lower lemma

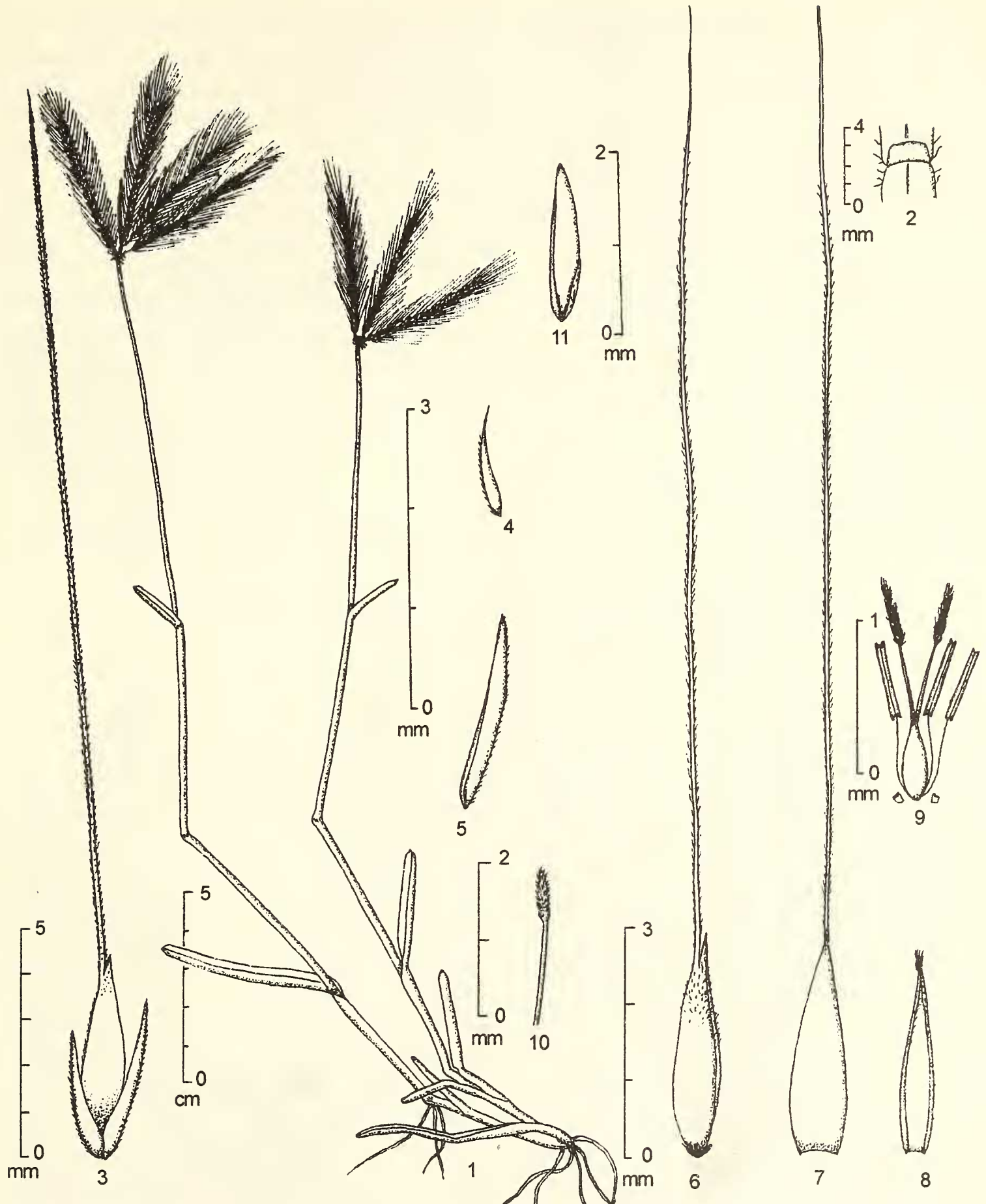


Fig. 2: *Chloris pycnothrix* Trin.; 1. Habit, 2. Ligule, 3. Spikelet, 4. Lower glume, 5. Upper glume, 6. Lemma - Lateral view, 7. Lemma - back view, 8. Palea, 9. Stamens & pistil, 10. Rachilla, 11. Caryopsis

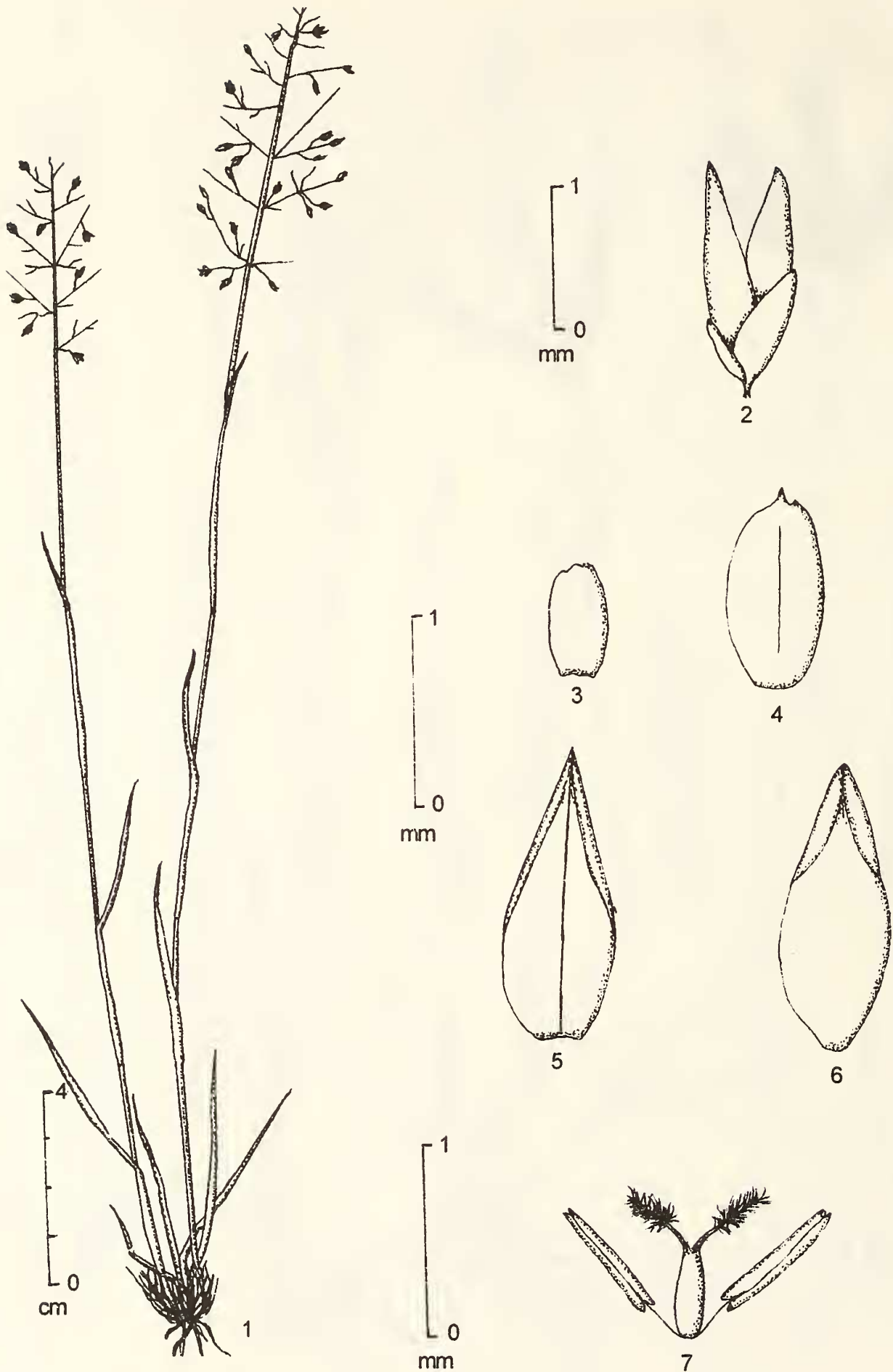


Fig. 3: *Sporobolus wallichii* Munro & Trin.; 1. Habit, 2. Spikelet, 3. Lower glume, 4. Upper glume, 5. Lemma, 6. Palea, 7. Stamens and pistil

3. *Sporobolus wallichii* Munro ex Trin. in J. Bot. 27: 171. 1889; Hook. f. Fl. Brit. Ind. 7: 248. 1896; Bor, Grass. Bur. Cey. Ind. Pak. 634. 1960. Mathew, Mat. Fl. Tamil. Carnatic 401. 1981. Fig. 3.

Perennial, tufted, 5-15 cm tall, simple or sparingly branched. Leaves linear, 5-15 cm long, acute. Panicles effuse, ovate-oblong, 4.5-8.5 x 2-3 cm, rachis slender, branches filiform, pedicels capillary. Spikelets lanceolate, 1-1.5 mm long. Lower glume oblong, nerveless, truncate. Upper glume oblong-elliptic, obscurely 1-nerved, acute. Lemma ovate-lanceolate, 1-nerved, acute. Palea ovate-oblong, obscurely nerved, subacute. Lodicules minute, stamens 2.

Rare in open grasslands on rocky soil.

Fl. & Fr.: July-September.

Distribution: Kolhapur: Shivaji University

Campus, Salunkhe 8897.

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49. VEGETATION AND PHENODYNAMICS OF WETLANDS OF CENTRAL RAJASTHAN

(With four text-figures)

Studies of low-lying areas, including temporary ponds and pools, were initiated in India by Biswas and Calder (1937), Misra (1946), Ratnam and Joshi (1952), Mall (1961), Vyas (1964), Zutshi (1975), Bhardwaja (1980), Gopal (1986a, b), Bhardwaja and Gena (1987), Sharma K.C. and R. Sharma (1992), Sharma R. and K.C. Sharma (1992), and Anon. (1994). The gently sloping marginal area here exhibits a lush-green carpet of wetland plant species. The shallow middle area remains covered with water during the rainy season, getting exposed gradually to the slushy bottom stage and supporting hygrophilous vegetation during winter. This study reveals that wetlands bear transitional species interspersed with true aquatics, mesic terrestrials, hygro-halophytes, ephemerals, ephemeroids (grasses), poikilohydrics and dried bed plants (Vijay 1999, 2000). In these fluctuating ecosystems, patch dynamics is

extremely important. Patches of relatively well-delineated areas of vegetation arise from the visible distribution of populations. These patches keep changing with time (Bohmer and Richter 1997). Some unique wetland plants like *Marsilea* spp., *Polygonum* spp., *Ammania baccifera*, *Bacopa monnieri*, *Cyperus* spp., *Scirpus* spp., grow in all zones of wetlands. Zones in vegetational mats occur in patches from the margins towards the centre. In cracks and crevices, *Glinus lotoides* and *Polygonum plebeium* grow profusely. It is well known that wetland plants show fluctuating phenology or phenodynamics, which is totally dependent on the availability of water. Centripetal movement and centrifugal movement of both water and vegetation is an interesting phenomenon of wetlands, and arborescent habit is rare due to fluctuating water levels with slushy beds containing no vegetation. In some small ditches